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Air Operating Permit
Excess Emissions Report
Form Part II

Name of Facility	Shell, Puget Sound Refinery	Reported by	Tim Figgie
Date of notification	Nov 25, 2010	Incident type: breakdown/ upset/startup or shutdown	Breakdown
Start Date	Nov 25, 2010	Start Time:	5:00 PM
End Date	Nov 25, 2010	End Time:	6:00 PM
Process unit or system(s): DCU			

Incident Description

On November 25, 2010 the Delayed Coking Unit heater 15F-100 exceeded the firing rate limit of 124 mmbtu/hr hourly average at 5PM. The 1-hour average was 124.9 mmbtu/hr. The high reading occurred shortly after the coker went into blowdown, which is a normal part of the blowdown cycle due to heat loss in fractionator during a drum switch. The heater fires harder to make up for the heat loss. In this case the computer alarming system that tracks the heater firing rate malfunctioned and did not alert Operations of high heater firing rates. Because Operations was not alerted of the high firing rate adjustments were not made. To prevent a reoccurrence the alarm system is being upgraded to improve reliability of the system.

Immediate steps taken to limit the duration and/or quantity of excess emissions:

Heater firing rates were reduced.

Applicable air operating permit
term(s): 5.2.5

Estimated Excess Emissions: Based on SO2 CEMS and calculated stack flow	Pollutant(s): NOx	Pounds (Estimate): 0.06 lbs
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The incident was the result of the following (check all that apply):

- ☐ Scheduled equipment startup
- ☐ Scheduled equipment shutdown
- ☐ Poor or inadequate design
- ☐ Careless, poor, or inadequate operation
- ☐ Poor or inadequate maintenance
- ☒ A reasonably preventable condition

Did the facility receive any complaints from the public?

- ☒ No
- ☐ Yes (provide details below)

Did the incident result in the violation of an ambient air quality standard

- ☒ No
- ☐ Yes (provide details below)

Root and other contributing causes of incident:

Malfunctioning alarm system.

PSR0000536

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The root cause of the incident was:

(The retention of records of all required monitoring data and support information shall be kept for a period of five years from the date of the report as per the WAC regulation (173-401-615))

- ☒ Identified for the first time
☐ Identified as a recurrence (explain previous incident(s) below – provide dates)

Are the emissions from the incident exempted by the NSPS or NESHAP "malfunction" definitions below?

- ☐ No
☒ Yes (describe below)

A malfunctioning alarm system prevented operations from making timely adjustments.

Definition of NSPS "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 60.2

Definition of NESHAP "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 63.2

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

To prevent a reoccurrence the alarm system is being upgraded to improve reliability of the system.

Description of corrective action to be taken (include commencement and completion dates):

See above

If correction not required, explain basis for conclusion:

See above

Attach Reports, Reference Documents, and Other Backup Material as Necessary. This report satisfies the requirements of both NWCAA regulation 340, 341, 342 and the WAC regulation (173-400-107).

Is the investigation continuing? ☒ No ☐ Yes

Is the source requesting additional time for completion of the report? ☒ No ☐ Yes

Based upon information and belief formed after reasonable inquiry, I certify that the statements and information in this document and all referenced documents and attachments are true, accurate and complete.

Prepared By: Jeff Solomon Date: December 2, 2010

Responsible Official or Designee:  Date: 12/28/10